Hybrid event - Free participation

Friday May 27, 2022

Health research on air pollution effects and climate change: challenges and opportunities

Air pollution, including chemical toxicants and airborne pollen, poses a major threat to human health. Pollen exposure can cause allergic reactions and increase the risk of developing allergic diseases. Biogenic Volatile Organic Compounds (VOCs) emitted from terrestrial vegetation account for about 90% of the total atmospheric VOC emission; they are important for their chemistry in the atmosphere, including ozone-forming reactions, and can thus affect human health. Climate and meteorological conditions influence the spatial distribution of plants, pollination, and the atmospheric dispersion of pollen grains. Climate change may indeed be linked to the increase in the frequency of allergic rhinitis and asthma observed in several countries over the recent decades. The health effects of pollens and biogenic VOCs are poorly understood, mainly due to the lack of models to estimate variation in pollen concentrations over space and time. Accurate forecasting models of the main environmental triggers of allergic and chronic diseases may help developing public health interventions that are effective to mitigate the impact of climate change on human health.

This workshop will introduce the rationale and methods used in the MEETOUT project – Mitigation of the Effects of Environmental Triggers on the OUTcomes of chronic respiratory diseases – a 3-year project coordinated by University of Verona that was launched in January 2022. Attendants will be provided with an overview of the opportunities given by the availability of Big Data and of the challenges and methodological issue typically encountered in environmental epidemiological research. Exposure and forecast models applied in different fields – meteorology, engineering, and epidemiology – will be the main focus points of the workshop.

Organized by the PhD School in Applied Life and Health Sciences, University of Verona

Scientific programme by Alessandro Marcon, Unit of Epidemiology and Medical Statistics, Dept. of Diagnostics and Public Health, University of Verona (alessandro.marcon@univr.it)

Timetable

9.00 Welcome (G. Verlato)

9.15 The Meet-Out project: rationale and objectives (A. Marcon)

9.40 Meteorological and climatic forecasting models (F. Domenichini)

10.05 The European forecast model of pollen concentrations (M. Adani)

10.30 Simulation of biogenic emissions from vegetation (C. Silibello)

10.55 Break

11.20 Simulation of air pollution dispersion in urban environments (S. Le Clainche)

11.45 The Meet-Out project: What are the results so far? (S. Tagliaferro)

12.10 Q&A and conclusions

12.30 End of workshop

Speakers

Mario Adani, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA)

Francesco Domenichini, Agency for Environmental Prevention and Protection of Veneto Region (ARPAV)

Soledad Le Clainche, School of Aerospace Engineering, University of Madrid, Madrid

Alessandro Marcon, Department of Diagnostics and Public Health, University of Verona

Camillo Silibello, Arianet company, Milano

Sofia Tagliaferro, PhD candidate in Applied Life and Health Sciences

Giuseppe Verlato, Department of Diagnostics and Public Health, University of Verona

Audience: The seminar/webinar is thought for PhD students. Other students, researchers, personnel, and external auditors are welcome in presence or by Zoom.

Registration required: https://limesurvey.univr.it/index.php/122279

Room: Aula A - Borgo Roma - Istituti Biologici Blocco A (strada Le Grazie 8, Verona)

Zoom link:

https://univr.zoom.us/j/81865596213?pwd=N1k3eGs2K0JEaXlwbmttdUo1akx1dz09